

# P1858

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**Submitter Email:** [mbelska@nvidia.com](mailto:mbelska@nvidia.com)

**Type of Project:** Revision to IEEE Standard 1858-2016

**PAR Request Date:** 17-Oct-2016

**PAR Approval Date:** 07-Dec-2016

**PAR Expiration Date:** 31-Dec-2020

**Status:** PAR for a Revision to an existing IEEE Standard

**Root Project:** 1858-2016

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**1.1 Project Number:** P1858

**1.2 Type of Document:** Standard

**1.3 Life Cycle:** Full Use

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**2.1 Title:** Standard for Camera Phone Image Quality (CPIQ)

**Changes in title:** ~~IEEE Approved Draft~~ Standard for Camera Phone Image Quality (CPIQ)

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**3.1 Working Group:** Camera Phone Image Quality (BOG/CAG/CPIQ)

**Contact Information for Working Group Chair**

**Name:** Margaret Belska

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**Contact Information for Working Group Vice-Chair**

None

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**3.2 Sponsoring Society and Committee:** IEEE-SA Board of Governors/Corporate Advisory Group (BOG/CAG)

**Contact Information for Sponsor Chair**

**Name:** Philip Wennblom

**Email Address:** [wennblom@ieee.org](mailto:wennblom@ieee.org)

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**Contact Information for Standards Representative**

None

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**4.1 Type of Ballot:** Entity

**4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot:** 07/2017

**4.3 Projected Completion Date for Submittal to RevCom**

**Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.:** 12/2017

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**5.1 Approximate number of entities expected to be actively involved in the development of this project:** 11

**5.2 Scope:** This standard addresses the fundamental attributes that contribute to video and still image quality, as well as identifying existing metrics and other useful information relating to these attributes. It defines a standardized suite of objective and subjective test methods for measuring camera phone image quality attributes, and it specifies tools and test methods to facilitate standards-based communication and comparison among carriers, handset manufacturers, and component vendors regarding camera phone image quality.

**Changes in scope:** This standard addresses the fundamental attributes that contribute to **video and still** image quality, as well as identifying existing metrics and other useful information relating to these attributes. It defines a standardized suite of objective and subjective test methods for measuring camera phone image quality attributes, and it specifies tools and test methods to facilitate standards-based communication and comparison among carriers, handset manufacturers, and component vendors regarding camera phone image quality.

**5.3 Is the completion of this standard dependent upon the completion of another standard:** No

**5.4 Purpose:** Camera-equipped mobile devices have become ubiquitous, displacing dedicated digital cameras as many users' primary tools for photography. However, consumers have little guidance about the quality of the images produced by particular device models. That lack of guidance is due in part to a lack of uniform image quality testing for the devices, and what testing is done seldom is accessible to the layperson. This standard attempts to establish a uniform means of evaluating the quality of cameras in mobile devices,

**Changes in purpose:** ~~This standard~~ **Camera-equipped mobile devices** have become ubiquitous, displacing dedicated digital cameras as many users' primary tools for **measuring** photography. ~~and~~ **However, testing** consumers ~~camera~~ **have** ~~phone~~ **little image** guidance about the quality of the images produced by **particular device models**. That lack of guidance is due in part to ~~ensure a consistency~~ **lack of uniform image quality testing for the devices, and what testing is done seldom is accessible to the layperson.**

allowing objective comparison between devices, models, and manufacturers, using a variety of metrics that are relevant to consumer photography.

This standard attempts to establish a uniform means of evaluating the quality of cameras in mobile devices, allowing objective comparison between devices, models, and manufacturers, using a variety of metrics that are relevant to consumer photography.

**5.5 Need for the Project:** Camera phones currently on the market with identical image (megapixel) resolution capabilities produce vastly different quality images. Due to sensor and lens size limitations, increasing the number of megapixels in a camera phone often leads to reduced image quality. Camera phone vendors do not have sufficient standardized metrics to compare one product to the next. They simply know whether or not a mobile phone contains an image capture device. At the same time, they know that image quality is important to consumers as an aspect of product quality, and important to motivate them to print or share those images.

**5.6 Stakeholders for the Standard:** Camera-equipped mobile device manufacturers, application developers, telecom service providers, OS vendors, test labs and test software and equipment vendors, sensor, lens, and ISP manufacturers.

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## Intellectual Property

**6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?:** No

**6.1.b. Is the Sponsor aware of possible registration activity related to this project?:** No

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**7.1 Are there other standards or projects with a similar scope?:** No

## 7.2 Joint Development

**Is it the intent to develop this document jointly with another organization?:** No

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**8.1 Additional Explanatory Notes:** This revision will include updates/modifications/clarifications to several existing metrics: Visual Noise, Texture Blur, Local Geometric Distortion, and Lateral Chromatic Displacement. This revision will also include addition of several new metrics to make the overall Standard more comprehensive and complete: Auto White Balance, Auto Exposure, Video Quality, Auto Focus Consistency, and Resolution.

The purpose (Section 5.4) of the new revision is fundamentally the same as Revision 1, with both discussing the need for a uniform/consistent way of measuring camera image quality using specified metrics. The new Purpose statement elaborates on why such a need exists in the industry.